WE CLAIM:

1. A group of isolated homologous cellular growth stimulating proteins designated gastrokines, said proteins produced by gastric epithelial cells and comprising the amino acids in the sequence VKEK/QK[K]XXGKGPGGXPPK (SEQ ID NO: 1).

2. An isolated proteinhaving a sequence of amino acids from positions 21 to 185 of the sequence as shown in FIG. 8 (SEQ ID NO: 18), said protein present in pig gastric epithelia in a processed form lacking the 20 amino acids which constitute a signal peptide sequence, having 165 amino acids and an estimated molecular weight of approximately 18 kD as measured by polyacrylamide gel electrophoresis, said protein capable of being secreted.

3. An isolated protein comprising amino acids in the sequence as in FIG. 3 (SEQ ID NO: 13).

4. An isolated protein comprising amino acids in the sequence as in FIG. 6 (SEQ ID NO: 16).

5. A growth stimulating peptide derived from a protein of claim 1.

6. A modified peptide produced by the method comprising the following steps:

(a) eliminating major protease sites in an unmodified peptide amino acid sequence by amino acid substitution or deletion in the unmodified peptide derived from a protein of claim 1; and

(b) optionally introducing amino acid analogs of amino acids in the unmodified peptide.

7. A synthetic growth stimulating peptide, having a sequence of amino acids as in positions 78 to 119 of the sequence shown in FIG. 3 (SEQ ID NO: 13).

8. A synthetic growth stimulating peptide having a sequence of amino acids from position 97 to position 117 as shown in FIG. 3 (SEQ ID NO: 13)

9. A synthetic growth stimulating peptide having a sequence of amino acids from position 97 to position 121 as shown in FIG. 3 (SEQ ID NO: 13).

10. A synthetic growth stimulating peptide having a sequence of amino acids from position 104 to position 117 as shown in FIG. 3 (SEQ ID NO: 13).

11. An isolated bioactive peptide consisting of a sequence selected from the group

consisting of LDTMVKEQKGKGPGGAPPKDLMY (SEQ ID NO: 2) and KKLQGKGPGGPPPK (SEQ ID NO: 3).

13. A composition used for the treatment of ulcers, said composition including at least a growth stimulating peptide of claim 5.

14. A pharmaceutical composition for the treatment of diseases associated with overgrowth of gastric epithelia, said compositions comprising an inhibitor of a protein of the group of claim 1 or of a growth stimulating peptide of claim 5.

15. A pharmaceutical composition for the treatment of diseases of the colon and small intestine, said diseases selected from the group consisting of ulcerative colitis and Crohn's Disease, said composition comprising at least a growth stimulating peptide of claim 5.

22. A method to stimulate growth of epithelial cells in the gastrointestinal tract of mammals, said method comprising :

(a) contacting the epithelial cells with a composition comprising a protein from the group of claim 1 or a peptide derived from a protein of claim 1, and

(b) providing environmental conditions for stimulating growth of the epithelial cells.

27. A method to stimulate migration of epithelial cells after injury to the gastrointestinal tract of mammals, said method comprising:

(a) contacting the epithelial cells with a composition comprising a protein from the group of claim 1 or a peptide derived from a problem of claim 1; and

(b) providing environmental conditions allowing migration of the epithelial cells.

28. A method for cytoprotection of damaged epithelial cells in the gastrointestinal tract of mammals, said method comprising:

(a) contacting the damaged epithelial cells with a composition comprising a protein of the group of claim 1 or a peptide derived from a protein of claim 1; and

(b) providing environmental conditions allowing repair of the epithelial cells.

29. The method of claim 28, wherein the damaged cells are an ulcer.